# Pressure Reducing Fire Hose Valves

Sprinkler and standpipe equipment manufacturers and installers have used pressure reducing fire hose valves for many years. They are designed to compensate for excessive pressure in standpipe systems at the fire hose valve outlet. When installed, tested, and maintained properly they have been know to provide effective hose streams while not creating a condition of excess pressure at the nozzle.

When these devices fail to live up to performance as designed the consequences can be fatal. This was demonstrated in 1991 at the Meridian Plaza fire in Philadelphia. Three firefighters were killed and significant fire damage occurred on upper floors of this office high rise. Pressure reducing fire hose valves failed to operate correctly and effective hose streams were unavailable when they were needed the most.

Large diameter leader lines were advanced to the 30th floor up the stairway to the fire floors. Deployment of attack lines was significantly delayed.

Since 1991 Montgomery County Fire and Rescue has outlawed the use of these valves. Some buildings still have them in place since they were permitted an installed prior to the Meridian Plaza fire.

This was discovered at 7335 Wisconsin Avenue on Tuesday January 10th 2006. While conducting an operations level inspection with the crew from truck 6, pressure reducing fire hose valves were discovered on the upper floors at the standpipe risers in the stairwells. No records were found to indicate they had been properly maintained for the last 20 years.

This is the exact same condition that was discovered to have directly been attributable to the loss of life of three Philadelphia firefighters.

We do not know how many more structures have these same valves in Montgomery County. Record keeping for the time was pen in hand and data retrieval would be difficult and time consuming at best.

The fact that this condition was discovered as the result of a company level inspection speaks volumes. The positive value of station level inspections has been demonstrated here and in other important areas of fire protection and life safety compliance.

In some cases, the valves being systematically removed may not be the best course of action. Each structure will require a comprehensive review to determine the best option based on hydraulics, fixed fire pumps, system type, age of structure and age of the system.

## What Can Be Done?

There are a number of important steps to alleviate this potential problem in this structure and others. Recognition of where this problem exists and a systematic approach to correct are obviously the best course of action.

1. Correct this condition at 7335 Wisconsin Avenue. Fire Code Enforcement will follow up and provide feed back to station 6 personnel. The valves will either be removed or properly tested, witnessed by fire rescue personnel, labeled for proper position and set screw location, and maintained annually. All hydraulic calculations will be required to be demonstrated to Department of Permit Services plans examiners and Fire Code Enforcement fire protection engineers.
2. Provide information to all Montgomery County Fire Rescue personnel on the proper method to identify these valves and request assistance from code enforcement.
3. Fire Code Enforcement will follow up on all reports of PRVs in buildings in Montgomery County. Notice of correction will be issued and repairs or replacement will be witnessed by code enforcement. Strict timelines for compliance will be adhered to.
4. Report our findings to the National Fire Sprinkler Association.
5. Keep accurate data base of all structures where PRVs are permitted to remain and follow up each year for verification of proper maintenance.

Thank you to the crew of truck 6 B shift for assisting with this very important corrective action. Lt. Julio Falcon, Fire Fighter Paul Haney, Fire Fighter Joe Laque, and Captain Gary Cooper.

While we seek quick corrective measure for this location, a comprehensive review of findings will be compiled so as to facilitate a method of training.

From the Desk of Lt. Rick Barnes
Division of Life Safety
Fire Code Enforcement Section

**Pressure Reducing Angle Valve** made of cast brass can be adjusted to restrict pressures up to 175lbs. Locking pin device restricts full opening of valve by untrained personnel. Pin may be removed by fire personnel to allow full open valve. U.L. Listed.